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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

BANANKHAH, MAJID A

ART UNIT

PAPER NUMBER

2127

DATE MAILED: 03/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/606,839

Applicant(s)

KARDACH, JAMES P.

Examiner

Majid A Banankhah

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE ____ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____ |

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1. This office action in response to paper number 12, request for RCE, and preliminary Amendment D that was February 2, 2004. Claims 1-20 are presented for examination. Claim 13 is amended and new claims 18-20 are added. Applicant's argument has been fully considered but they are not deemed to be persuasive.

2. The text of those sections of Title 35, U.S. code not included in this office action can be found in a prior Office action.

3. Claims are rejected under 35 U.S.C. § 103 as being unpatentable over Collins et al. (U.S.Pat. No. 5,764,953, hereinafter Collins) in view Williams (U.S.Pat. No. 5,764,852, hereinafter Williams).

3.1. Per claim 1, Collins teaches, Receiving a real time data at a personal computer implementing a general purpose operating system, generating real time event indicating a request to process real-time data; and determining whether the real time event at the personal computer indicating a request to process the real time data (receiving real time mode of operation and real-time event, col. 2, lines 46-68, continued on col. 3, lines 1-9); processing the real-time event if the real time event has a higher priority than the first event (The events in queue 38 preferably are priority-ordered based on relative priorities associated with each type of event, col. 6, lines 49-68, continued on col. 7, lines 1-7).

Per claim 2, continue Processing the first event if the real-time event does not have a higher priority than the first process (According to the priority-ordered structure of queue 38, for example, the highest priority event must be dequeued first, regardless of the order in which the events were enqueued. In contrast, the time-ordered structure of queue 58 requires that internal events are to be dequeued in ascending order of their transaction-times, with the lowest

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transaction-time being chronologically the earliest, col. 11, lines 53-68-, continued on col. 12, lines 1-3).

While the reference of Collins teaches of real time simulated data and random generated domain event which are discrete analog data (See, Collins, 5, lines 46-58, The discrete-event simulated mode of system 10 may operate on either randomly generated domain events or stored domain events captured during the real-time mode. In addition, the simulated mode does not require development of a separate simulated model. Rather, the simulated mode uses the same resource domain model developed for use in the real-time mode), he fails to teach of real time analog data. However the system of Williams taught receiving real time data and subjects them to digital to analog filtration (See, Williams, col. 3, lines 10-25). Therefore, it would have been obvious for one ordinary skill in the art at the time the invention was made to use a filtration system of Williams to generate real time analog data into real time event and direct that to the computer for the purpose of processing of the analog data by a computer and being able to process not only digital real time event but also analog real time events.

Per claims 17 and 18, the reference of Williams, teaches of registers teaches of analog to digital converter and use of register in col. 3, lines 10-25, and col. 4, lines 29-37 (*Williams, Inputs and outputs for the various multimedia end devices 13 are connected through the digital-to-analog (D/A) and analog-to-digital (A/D) converter 47. In FIG. 2, a telephone input/output 49, a microphone input 53, and stereo outputs 55, 57 are depicted, in an exemplary manner, and are connected through the A/D and D/A converters in hardware interface 47).*

3.2. Claims 3-6 are rejected under 35 U.S.C. § 103 as being unpatentable over Collins et al. (U.S.Pat No. 5,764,953) in view Williams (U.S.Pat. No. 5,764,852) and further in view of Mays et al (U.S.Pat No. 6,035,321).

Per claims 3-6, the reference of Collins fails to explicitly teach of the “saving the state of the first event at the personal computer prior to processing the real-time event; and processing the prior event after processing of the real-time event has completed”. However, saving the state of a thread or an event on behalf of the high priority event, and restoring the state of the prior event for execution is well known in the art as it is evidenced by Mays (Accordingly, when a low level, high priority context is designated for handling an event, **the kernel will use the priority of that context to preempt the execution of tasks having a lower execution priority**, i.e. tasks that are captured by higher level contexts. A pointer to the context is stored in the address space of the task, and a wake up semaphore is posted 1415 for the task, col. 22, lines 10-51). The reason for combining is to give the higher priority events (or task or thread or process) to be processed before the lower priority events and return to the regular execution once the execution of the high priority event is completed. Therefore, it would have been obvious for one ordinary skill in the art at the time the invention was made to allow lower priority events be saved in favor of the high priority events and get back to processing of the lower priority event. The motivation would be obvious because, the lower priority event need to be processed once the urgency of the high priority event no longer exists.

3.3. Claims 13-16, are rejected under 35 U.S.C. § 103 as being unpatentable over Collins et al. (U.S.Pat No. 5,764,953) in view Williams (U.S.Pat. No. 5,764,852) further in view of Mays et al. (U.S.Pat No. 6,035,321) further in view of Matsui et al. (U.S. Pat. No. 5,774,701).

Per claim 13, the modified Collins fails to explicitly teach of a CPU and a timing signal and generating real time event. However, using clock signal to generate real time event is well known in the art as it is evidenced by Matsui (col. 2, lines 46-65), for the reason to drive the processor to operate at different speed. Therefore, it would have been obvious for one ordinary

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skill in the art at the time the invention was made to use timing signal at predetermined time interval to generate real time event and operate the CPU at different speed.

Regarding claim 9, see Mays, col. 14, lines 17-21, and Fig. 7A.

Additionally, while real time events are registered in the computer in order to be processed by the interrupt processor in any computer, the reference of Collins does not explicitly teaches of a register coupled to the event mechanism to store real-time data received at the CPU as analog data, and determination that the real time data is stored in the register. However, the reference of Williams teaches of registering real time analog data in a storage for the reason that the invention does not have to be activated once the event is registered and freeing computer resources for other applications (See, col. 8, lines 10-17, col. 9, lines 4-10).

Regarding use of register in claim 14, See Matsui col. 5, lines 18-35.

Per claim 15, See Collins, col. 6, lines 49-68.

Regarding claim 16, see the rejection of claims 17 and 18.

3.4. Claims 7-12, and 19-20 are rejected under 35 U.S.C. § 103 as being unpatentable over Collins et al. (U.S.Pat No. 5,764,953) in view Williams (U.S.Pat. No. 5,764,852) further in view of Mays et al (U.S.Pat No. 6,035,321), further in view of Matsui et al. (U.S. Pat. No. 5,774,701).

Per claims 7, and 8 the modified Collins fails to explicitly teach of a CPU and a timing signal and generating real time event. However, using clock signal to generate real time event is well known in the art as it is evidenced by Matsui (col. 2, lines 46-65), for the reason to drive the processor to operate at different speed. Therefore, it would have been obvious for one ordinary skill in the art at the time the invention was made to use timing signal at predetermined time interval to generate real time event and operate the CPU at different speed. Additionally, regarding claims 7 and 12, 16-17, the modified Collins fails to explicitly teach of analog to

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digital converter, However, the use of analog to digital converter is well known in the art as it is evidenced by Williams, in col. 5, lines 60-68, continued on col. 6, lines 1-5, for the reason to be able to process analog data. Therefore, it would have been obvious for one ordinary skill in the art at the time the invention was made to use Williams's analog to digital converter. Mays also teach of operating system and bus in col. 7, lines 51-68, continued on col. 8, lines 1-12.

Regarding claim 9, see Mays, col. 14, lines 17-21, and Fig. 7A.

Regarding use of register in claim 10, See Matsui col. 5, lines 18-35.

Regarding claim 11 and relative priority, See Collins, col. 6, lines 49-68.

Per claims 12, the modified Collins fails to explicitly teach of analog to digital converter, However, the use of analog to digital converter is well known in the art as it is evidenced by Williams in col. 5, lines 60-68, continued on col. 6, lines 1-5, and col. 9, lines 4-10, for the reason to be able to process analog data. Therefore, it would have been obvious for one ordinary skill in the art at the time the invention was made to use William's analog to digital converter.

Per claim 19, please see the rejection of claim 18 above.

Per claim 20, Williams, teaches of multimedia and stereos sound in col. 4, lines 29-37.

4. In the Remarks, on page 8, applicant argues in substance:

- 4.1. that: "Applicant submits that nowhere in Collins is there disclosed receiving **real-time analog data at a personal computer**. Collins discloses receiving real-time and simulated events. Real-time events represent an actual change to a diverse object set, while a Simulated event represents a simulated change to a diverse object set. However, there is no disclosure of the real-time events a simulated events being received **as analog data**. As a result, claim 1 is patentable over Collins. Claims 2-6, 17 and 18 depend from claim 1 and include additional limitations. Therefore, claims 2-6 are also patentable over Collins." [*Emphasis not in original*]

This is not found persuasive because Collins teach of a priority ordered queue where the events are arranged according to their priority regardless of the type of the events or being part of

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a particular type (both external [simulated], and internal [time driven]) (See Collins, col. 11, lines 53-68, continued on col. 12, lines 1-18, According to the priority-ordered structure of queue 38, for example, the highest priority event must be dequeued first, regardless of the order in which the events were enqueued). He even teaches of dequeuing the events according to order in which they have been enqueued (See coll. Col. 12, lines 13018). Additionally, regarding the argument that real time analog data, it is submitted that, converting digital data to analog data is notoriously known in the art. Since Collins does not explicitly teaches of this feature, the Examiner is citing other secondary references such as Williams to show this feature. The reference of Williams, teaches of this feature (*Col. 3, lines 62-68, Microphone 19 may be used to receive speech audio input events, i.e., human speech, the audio input events may be processed using a multimedia application that is directed towards recognizing speech from analyzing inputs from microphone 19, and col. 4, lines 29-37, Inputs and outputs for the various multimedia end devices 13 are connected through the digital-to-analog (D/A) and analog-to-digital (A/D) converter 47. In FIG. 2, a telephone input/output 49, a microphone input 53, and stereo outputs 55, 57 are depicted, in an exemplary manner, and are connected through the A/D and D/A converters in hardware interface 47).*

4.2. Later, on page 8, applicant argues:

“Applicant submits that nowhere in Collins is there disclosed a CPU to generate a real-time event upon receiving real-time analog, data at the computer system. Thus, for the reasons described above with respect to claim t, claim 7 is also patentable over Collins. Because claims 8- 12, 19 and 20 depend from claim 7 and include additional limitations, claims 8-12, 19 and 20 are also patentable over Collins”.

In response examiner disagree. In claim 1, the analog data re received and in the second step real time event is generated. Similarly in Collins, event generator is inputting data into the event processor (*Fig, 4, 18*) and the real time event is generated in R-T event file. Whether it is digital or analog, this does not change the method of Collins invention because, analog data is converted into digital as it is shown by Williams (See, Collins, and col. 5, lines 46-57, *The discrete-event simulation mode of system 10 may operate on either randomly generated domain event or stored domain events captured during the real-time mode. In addition, the simulation mode does not require development of a separate simulation model*). The stored domain event is captured during real-time mode. Simulation by definition is to create the actual domain events for the purpose of analysis.

4.3 on page 9, applicant argues :

Thus, for the reasons described above with respect to claims 1 and 7, claim 13 is also patentable over Collins. In addition, claim 13 is patentable over Collins

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because Collins does not disclose an event mechanism to generate real time events in response to receiving timing signals and determining that real-time data is stored within a register. Since claims 14-17 depend from claim 13 and include additional limitations, claims 14-17 are also patentable over Collins.

In response, the reference of Matsui is used for showing the obviousness with respect to "timing signal". Additionally, applicant's attention is directed to the teaching of Matsui in col. 12, lines 19-37, where he teaches of a timer circuit that provide time management for the CPU including time management for the event and other time related events (The timer circuit TIM supports time management necessary for the central processing unit CPU. The serial communication interface SCI supports serial data transfer with an external communication controller or the like. The analog/digital converter A/D converts an analog signal supplied from an external sensor or the like into a digital signal of the predetermined number of bits). The Examiner is citing this reference to show that event is a time dependent phenomena in the computer. Any event, including real time event needs a timer to manage the event. How can a computer changes simulated, random and/or user interface event without having a clock signal to keep track of the time related events. The reference of Collins inherently teaches of this feature, but Matsui is used to explicitly show that, in order to keep track of the real time events, one uses a timing signal (See Matsui, col. 12, lines 28-37).

4.4 On page 10 applicant argue that:

"Nevertheless, Mays does not disclose or suggest receiving real-time analog data at a personal computer implementing a general purpose or operating system, a CPU to **generate a real-time event upon receiving real-time analog data at a computer system**, or an event mechanism to generate real time events in response to receiving timing signals and determining, that real-time data is stored within a register. As discussed above, Collins does not disclose or suggest such a limitation. Thus, any combination of Collins and Mays would also not disclose or suggest receiving real-time analog data at a personal computer implementing a general purpose operating system, a CPU to generate a real time event upon receiving real-time analog data at a computer system, or an event mechanism to generate real time events in response to receiving timing signals and determining, that real-time data is stored within a register. Consequently, the present Claims are patentable over Collins in view of Mays" [*emphasis not in original*].

In response, the argument is not persuasive for the same reasons as discussed in section (4.1-43 above) of this office action. Additionally, Applicant is trying to attack the references separately. Applicant argues the patentability of claims by individually addressing the references used to reject the claims. It is noted that the claims above are rejected as being obvious using a combination of the references. Applicant can not show non-obviousness by attacking the references individually where as here the rejections are based on a combination of references, In

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re Keller, 208 USPQ 871 (CCPA 1981). Matsui is used to showing timing signal and generating real-time event.

4.5. Further on page 11 applicant argue that:

“As discussed above, Collins and Mays do not disclose or suggest receiving real time analog data at a personal computer implementing a general purpose operating system, a CPU to generate a real-time event upon receiving real-time analog data at a Computer system, or an event mechanism to generate real time events in response to receiving timing signals and determining that real-time data is stored within a register. Thus, any combination of Collins, Mays and Matsui would also not disclose or such limitations. Accordingly, the present claims are patentable over Collins in view of Mays, and further in view of Matsui” later argues:

“As discussed above, neither Collins, Mays nor Matsui disclose or suggest such limitations. Thus, any combination of Collins, Mays, Matsui and Raamot would also not disclose or suggest receiving real-time analog, data at a personal computer implementing a general purpose operating system, a CPU to generate a real-time event upon receiving real-time analog data at a computer system, or an event mechanism to generate real time events in response to receiving, timing signals and determining that real-time data is stored within a register. Accordingly, the present claims are patentable over Collins in view of Mays, further in view of Matsui and further in view of Raamot”.

Regarding the analog to digital data and “generating real-time event upon receiving analog data” it is submitted that, every reference relies to some extent on knowledge of persons skilled in the art to complement that, which is disclosed therein. **In re Bode**, 550 F.2d 656, 193 USPQ 12 (CCPA 1977). The test for combining references is not what the individual references themselves suggest but rather what the combination of the disclosures taken as a whole would suggest to one of ordinary skill in the art. **In re McLaughlin**, 170 USPQ 209 (CCPA 1971). A reference is to be considered not only for what it expressly states, but for what it would reasonably have suggested to one of ordinary skill in the art. **In re DeLisle**, 160 USPQ 806 (CCPA 1969). The reference of Williams is used to show “**analog to digital converter**” which is discussed in section 5.3 above. Converting “analog data” to “digital signal” is notoriously known in the art and does not constitute a patentable subject matter.

Regarding the use of register, Williams teaches of the limitation in col. 4, lines 65-68, continued on col. 5, lines 1-8 (The present invention employs a method and apparatus that allows a voice recognition system to **automatically register background noises** [*real time analog event*] produced by peripheral devices. The present invention also may automatically enable and disable the voice recognition mode based on interrupts from the peripheral devices).

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5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Maid A. Banankhah** whose voice telephone number is (703) 308-6903. A voice mail service is also available at this number.

All response sent to U.S. Mail should be mailed to:

**Commissioner of Patent and Trademarks
Washington, D.C. 20231**

Hand-delivered responses should be brought to Crystal Park Two, 2021 Crystal Drive, Arlington, VA, Six Floor (Receptionist). All hand-delivered responses will be handled and entered by the docketing personnel. Please do not hand deliver responses to the Examiner.

All Formal or Official Faxes must be signed and sent to either (703) 308-9051 or (703) 308-9052. Official faxes will be handled and entered by the docketing personnel. The date of entry will correspond to the actual FAX reception date unless that date is a Saturday, Sunday, or a Federal Holiday within the District of Columbia, in which case the official date of receipt will be the next business day. The application file will be promptly forwarded to the Examiner unless the application file must be sent to another area of the office, e.g., Finance Division for fee charging, etc.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-9600.

Maid Banankhah

3/1/04

MAJID BANANKHAH
PRIMARY EXAMINER

